Subject: Re: FFT help
Posted by Norbert Hahn on Fri, 05 Nov 2004 14:23:03 GMT
View Forum Message <> Reply to Message

"IDLmastertobe" <shi_lee@hotmail.com> wrote:

> Hey, I am experiencing problem using fft function. Since FFT function
> provides the fourier transform of a certain input, for example,
> 8*cos(!PI*x/6),

First of all, this is a function. Please supply the min and max
values of x.

> I would expect an amplitude of 4 at 2 shifted frequencies,
> namely -!PI/6 and PI/6.

This should occur for an infinite number of values.

> However after I recieved data from the FFT, I
> recieved some amplitudes close to 2 at some random locations, can anyone
> explain to me why it happened? Thanks for your time.

I tried to check with the following code:

```
x=findgen(1000)/10
y = 8*cos(x)
plot, y
z = fft(y)
plot, abs(z)
print, max(abs(z))
;      3.32737
```

I get a distribution with peaks at x=1 and x=998 and a maximum of 3.32737.
Next I used 10,000 numbers and looked at
plot, [abs(z[0:20]),abs(z[9979:9999])]

Two peaks with 3.94421 as maximum values. So it approaches 4 as you expected.

HTH
Norbert